DOCUMENT RESUME

ED 428 859 PS 027 429

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TITLE The Relationship of Welfare Receipt to Child Outcomes.
INSTITUTION Child Trends, Inc., Washington, DC.
SPONS AGENCY National Inst. of Child Health and Human Development (NIH), Bethesda, MD.
PUB DATE 1997-00-00
NOTE 33p.
PUB TYPE Reports - Research (143)
EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Academic Achievement; *Behavior Problems; *Child Welfare; Children; Early Adolescents; Mathematics Achievement; *Poverty; Racial Differences; Reading Achievement; *Welfare Recipients; Well Being
IDENTIFIERS National Longitudinal Survey of Youth

ABSTRACT

Receipt of welfare is often negatively correlated with children's outcomes. However, because virtually all children who live in households that receive public assistance are poor, the question arises whether poor child outcomes are truly an effect of welfare, have only a spurious relationship to welfare receipt, or are a result of welfare selection factors. This study used data from children in the National Longitudinal Survey of Youth-Child Supplement who were 9 to 14 years of age in 1992, and controlled for poverty and for selection onto welfare. The findings indicated that: (1) controlling for child and maternal characteristics accounted for the majority of bivariate negative associations between welfare and cognitive ability and behavior problems among black children; (2) controlling for poverty did little to change the negative relationship between welfare and measures of academic achievement and behavior problems for either blacks or whites; and (3) controlling for selection onto welfare, through a two-stage selection model, reduces, but does not eliminate the negative relationship between welfare receipt and outcomes among white children and has little discernible effects among black children. (Ten tables detail statistical information. Contains 26 references.) (Author/KB)

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The Relationship of Welfare Receipt to Child Outcomes

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This research was funded by the NICHD Family and Child Well-being Research Network. The authors gratefully acknowledge the assistance of Greg Duncan, Peter Gottschalk, Elizabeth Peters, Duncan Chaplin and three anonymous reviewers.

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PS 027429

Abstract

Receipt of welfare is often negatively correlated with children's outcomes. Yet, virtually all children who live in households that receive public assistance are poor, giving rise to the question of whether poor outcomes are truly an effect of welfare, a spurious relationship between welfare and child outcomes, or a result of welfare selection factors. Using children in the NLSY-CS aged 9-14 in 1992, these possibilities are examined by controlling for poverty and for selection onto welfare. Controlling for child and maternal characteristics accounts for the majority of bivariate negative associations between welfare and cognitive ability and behaviors problems among black children. Controlling for poverty does little to change the negative relationship between welfare and measures of children's academic achievement and behavior problems for either blacks or whites. Controlling for selection onto welfare, through a two-stage selection model, reduces, but does not eliminate the negative relationship between welfare receipt and outcomes among white children and has little discernible effect among black children.

Key words: child outcomes, poverty, welfare

Introduction

Many recent discussions regarding welfare reform have presumed that public assistance has negative effects on recipients. Much of the debate centers on the women who were recipients of Aid to Families with Dependent Children (AFDC); yet there is also concern about the effects of welfare dependency on the development of children in families that receive welfare. While welfare is often found to be negatively correlated with children's cognitive attainment and behavior problems, the relationship between child outcomes and dependence on public assistance is clouded by the fact that, although not all poor children receive welfare assistance, virtually all children who live in welfare households are poor. Thus, if negative child outcomes are found to be associated with welfare receipt, the question that arises is whether this is a) a spurious relationship between welfare and child outcomes resulting from the association of both with poverty, b) due to measured or unmeasured selection factors that predispose children's mothers to go onto welfare, or c) truly an effect of welfare receipt or dependency. This paper examines the effects of welfare on children by analyzing first the relationship between welfare dependency and child outcomes. Next, how this relationship is affected by controlling for sociodemographic factors and for duration of poverty is examined. In the final step of the analysis, welfare receipt is purged of selection by using a two-stage selection model. In these selection analyses, receipt of welfare assistance is estimated in an initial probit model, and this measure is then regressed, along with the variables used in the previous steps, on the child outcomes.

Welfare and Child Outcomes

In bivariate analyses, children in families that receive welfare assistance have been found to have significantly poorer outcomes across a variety of domains (Zill, Moore, Smith, Stief & Coiro, 1991). For example, children in welfare families tended to have lower cognitive scores and poorer behavior ratings than non-poor children. However, poor children also tended to have poorer outcomes and children from both poor and welfare families tend to have less supportive home environments (Zill et al., 1991). Hence, these are a number of possible reasons for the bivariate association between welfare receipt and poorer child outcomes.

One possible explanation is that negative associations between welfare and child outcomes are due, either partially or wholly, to the negative relationship between poverty and child well-being. Living in a low-income family has been shown to be negatively associated with a number of child outcomes. However, poverty seems to more adversely affect some outcomes that others. Poverty is more often found to be related to children's cognitive abilities and academic achievements than to other outcomes such as mental health, physical health and behavior (Duncan et al., 1996). Given that children who live in households that receive welfare qualify for those benefits by being below official poverty lines, any associations found between welfare and child outcomes must take into account the economically deprived environments in which these children live.

Poverty, at least intermittent poverty, is a common experience for children in the United

States. One-third of all children spend at least one year below the poverty line. In fact, 72 percent of African American children fall into poverty before they turn eighteen and 28 percent are poor for more than ten years (U.S. Department of HHS, 1996).

Measuring poverty over a number of years is often more informative in predicting child outcomes than short-term or cross-sectional measures. The difference between the cognitive abilities of poor and non-poor children are two to three times larger when long-term measures of income rather than a one-year measure of poverty status is used, suggesting both that the effects of poverty are more accurately estimated when longitudinal measures are used and that long-term poverty has more deleterious effects than brief economic hardship (Korenman, Miller & Sjaastad, 1995). For example, length of time spent in poverty is negatively related to the cognitive scores of very young children. Always poor pre-school children performed worse than children who spent part of their lives in poverty; in turn, the latter group scored lower than never-poor children (Duncan, Brooks-Gunn & Klebanov, 1994). For the most part then, the results of past research support the premise that long-term poverty has different, and usually more deleterious, effects on children's outcomes than short-term or intermittent poverty. This statement is true, generally speaking, for both cognitive and behavioral outcomes. The child's home environment represents one critical pathway through which poverty appears to affect children's development.

A second aspect of poverty that merits attention when examining its effects on children is the ages that children live in poverty. The question of whether being poor during the first several years of life is more detrimental to children than being poor in middle childhood or in adolescence is an important one. Many studies that do not explicitly ask this question do in fact address it in part by focusing on a particular age group. A review of a number of recent studies (Duncan et al., 1996) suggests that the stage in a child's life in which poverty occurs is indeed crucial for certain outcomes. Economic deprivation in early childhood was found to be significantly related to lower educational attainment, while poverty at older ages was not a factor. Results from research done using data from the National Longitudinal Study of Youth-Child Supplement (NLSY-CS) suggest that early poverty is predictive of cognitive outcomes of young children (which may of course, in turn, play a role in future educational attainment) while more recent poverty has no additional effects after controlling for years of poverty at younger ages (Dubow & Ippolito, 1994).

Other studies contradict these findings. Using data from the PSID, Haveman, Wolfe and Spaulding (1991) found a negative association between the odds of graduating from high school and poverty experienced during adolescence (12-15 years old); no such relationship was found for poverty at younger ages. In a sample of children born to teen mothers in Baltimore, literacy in early adulthood, another measure of academic achievement, was found to be inversely associated with poverty in both early (ages 4-6) and later (ages 15-17) stages of childhood (Baydar, Brooks-Gunn & Furstenburg, 1993).

Brief experiences with poverty do appear to have some immediate, if short-lived,

consequences that are different from the effects of persistent economic hardship. For example, short- and long-term poverty have been found to be correlated with different outcomes. Long-term poverty was correlated with higher levels of depression, unhappiness and anxiety, whereas short-term current poverty predicted disruptive behaviors, but not the internalizing symptoms of depression, unhappiness and anxiety (McLeod & Shanahan, 1993).

Length of time spent in poverty may operate indirectly through other factors to affect the well-being of children, for example, the child's home environment, which, in turn, has been found to be correlated with a number of child outcomes. Measures of the quality of the children's home environment are directly related to whether the child lives in a poor household; the longer the household in which a child lives is poor, the lower the quality of the child's home environment, both in terms of cognitive stimulation and emotional support (Hao, 1995). Moreover, an increase in economic well-being led to greater improvements in home environment for children who experienced long-term poverty than for other children (Garrett, Ng'andu & Ferron, 1994). The quality of the home environment, in turn, is directly related to children's reading scores and level of problem behaviors; children who received less intellectual stimulation and less emotional support did worse in these two areas (Hao, 1995).

Analyses of NLSY-CS data explored the effects on children of various family welfare and poverty patterns over a four-year period (Moore, Glei, Driscoll & Zaslow, 1998). Although a variety of different income/welfare trajectories were identified as important to children's well-being, children whose families were ever poor or ever on welfare during the four-year period were significantly and substantially disadvantaged compared to children who were never poor and never on welfare (Moore et al., 1998). These analyses do not resolve, however, a critical question regarding the relative importance of welfare and poverty.

One way to control for the effects of poverty on outcomes is to restrict comparisons to children raised in households eligible to receive AFDC; therefore, all the children have experienced poverty. When this method was used to examine intergenerational welfare participation, AFDC participation in the family of origin was significantly correlated with both early childbearing and receipt of AFDC in the younger generation (Gottschalk, 1990).

A second possible explanation for negative associations between welfare receipt and children's outcomes is selection. Specifically, welfare receipt is endogenous in the child outcome model. It is likely that people who opt to go onto welfare are different in important ways from those who do not, including ways that may affect their children's well-being and development. For example, factors that cause parents to experience particular difficulty in obtaining or retaining employment and thus lead to welfare receipt may be the same factors that lead to less supportive and stimulating parenting. Individual characteristics may include human capital; single mothers with less education and lower current and future earnings opportunities are more likely to be on AFDC (Blank & Ruggles, 1996; Boisjoly, Harris & Duncan, 1997). They may also include marital and fertility histories; never-married mothers are more likely than divorced mothers to both go onto welfare and stay on welfare long-term (Bane & Ellwood, 1994) and

mothers with a child under the age of three account for more than half of all initial entries onto AFDC (Boisjoly, Harris & Duncan, 1997).

Attitudes towards, and knowledge of, work and welfare are often touted as factors that select mothers into welfare, or conversely, lower their odds of choosing to apply for public assistance. In a study comparing divorced and never-married welfare recipients, at least 75 percent of the difference in the propensity of these two groups to go onto welfare was due to with mothers' decision-making processes, which were presumably influenced by their attitudes towards working and receiving welfare and by their knowledge of the work world and of how to apply for welfare (London, 1996).

Exogenous factors that select individual single mothers onto welfare which are often cited are the relative generosity of state AFDC benefit levels, and local economic conditions. For some welfare recipients, some neighborhood characteristics may be related to the odds of leaving welfare as well. Among blacks, the neighborhood poverty rate and the male unemployment rate is negatively associated with the likelihood of a resident leaving welfare through the route of marriage, whereas the male employment rate is positively associated with leaving welfare by this manner. Among whites, the neighborhood poverty rate is inversely associated with leaving welfare through increased household earnings as are both the male and female unemployment rates (Vartanian, 1997).

Several studies have controlled for welfare selection factors. In a study of teenage males using data from the 1990 and 1992 Current Population Survey (CPS), AFDC receipt was found to be correlated with lower educational attainment, until selection onto welfare was controlled. Then, welfare was found to have no negative effects on school enrollment, regardless of race (Chaplin 1995). a similar study using the NLSY found that welfare has less negative consequences for blacks than for whites (Peters & Mullis, 1995). However, after using two-stage models to control for selection onto welfare, the earlier negative effects of welfare on academic outcomes (achievement test scores and completed schooling), as well as wages in adulthood, disappeared.

A third possible explanation for the association of welfare and poorer child outcomes is that the experience of welfare receipt somehow undermines the development of children, over and above any effects of poverty and distinct from any effects due to selection factors. There are a number of ways that welfare may undermine children's development. For example, welfare could have negative effects on children if it somehow undermines the morale or motivation of parents to the extent that they are less able or willing to meet their child's developmental needs. For example, the stigma associated with being on welfare or the idleness enforced by non-employment might lead to parental depression, which has been frequently found to predict diminished child development (Zaslow, Moore, Coiro & Morrison, 1995). Welfare might push fathers out of the child's home and even out of the child's life, leading to a single-parent family. Children in single-parent families have been found to be disadvantaged relative to children living with both biological parents (McLanahan & Sandefur, 1995).

If welfare receipt has deleterious effects on youth outcomes, those effects may be conditional on recipient characteristics such as race/ethnicity or on the extent of welfare dependency. Looking at older children in the PSID, Duncan and Yeung (1995) found welfare to be negatively correlated with the level of completed schooling for whites and blacks. However, the pattern of the relationship differed for the two groups. While educational attainment was found to be lower for whites in families that received any welfare during the youth's teenage years, welfare receipt was associated with lower educational attainment for blacks only when welfare exceeded 40 percent of average household income. This pattern was found after controlling for the ratio of family income to needs and maternal education. Analyzing data from the NLSY, Santiago (1995) also found that the effects of welfare differed by race/ethnicity. Controlling for household income in the family of origin, black women who lived in households that received AFDC while they were teenagers were more likely to be highly dependent on welfare than black women from families without this history. However, AFDC receipt during the teen years was not associated with later receipt for white or Latina women.

This study builds on previous research by analyzing the effects of welfare on child outcomes controlling first for poverty, then for poverty and selection onto welfare. In this way, it examines the relationship between welfare receipt and children's cognitive ability and behavior, net of both the poverty that virtually all children on welfare experience, and the factors that function to select their families onto public assistance. If the negative relationship between welfare and the dependent variables is due wholly or mainly to the concurrent poverty that children in welfare recipient families experience, then controlling for short- and long-term poverty would erase this association. If this relationship is a function of poverty and factors that select families onto welfare, then controlling for these two sets of factors would render the welfare relationship nonsignificant.

To examine the effects of welfare receipt on children's outcomes, a series of analyses were conducted. First, bivariate tabulations are carried out to confirm the anticipated negative association between welfare receipt and children's outcomes. Second, a number of confounding factors are controlled to test whether such variables account for the bivariate relationship. Third, the association between welfare and children's outcomes is examined, controlling for the duration of poverty that the child's family experienced. Controlling for poverty examines the hypothesis that the negative association between welfare and child outcomes is, in fact, a reflection of the negative effects of poverty, particularly prolonged poverty. Fourth, endogenous factors that both select parents onto welfare and undermine children's development are controlled to test the hypothesis that poorer outcomes found among children in welfare families are a result of parental, family and contextual characteristics that push or draw families onto welfare.

METHODS

Approach

The goal of this paper is to contribute to the understanding of the effect of welfare receipt

on several child outcomes. The focus is on middle childhood, which has received less attention than early childhood or adolescence. Thus, a sample of children from the NLSY-CS aged nine to fourteen in 1992 who were followed for six years between 1986 and 1991 was selected. Each family's receipt of AFDC and Food Stamps was tracked over this time period. Due to the substantial differences found for both the outcome and predictor variables by race at both the univariate and bivariate levels, analyses are conducted separately for non-Hispanic blacks and non-Hispanic whites (hereafter referred to as blacks and whites).

The dependent variables, measured in 1992, are a measure of the level of behavioral problems a child has, as reported by the mother, the Behavior Problems Index (BPI), and two measures of academic achievement, the Peabody Individual Achievement Tests (PIAT). One PIAT is a measure of mathematical ability; the other is a measure of reading comprehension. Research strongly suggests that children on welfare, and poor children in general, have more behavior problems and do more poorly in school, on average, than more advantaged children. Emotional and cognitive development are important predictors of children's future success and well-being; however, how disadvantage influences these areas among children in middle childhood is under-researched.

In the multivariate analyses, the initial models control for sociodemographic factors. Then, in order to obtain truer measures of the relationship between welfare dependency and children's outcomes, duration of poverty measures for the six years from 1986 to 1991 are added. Duration is measured as never, short-term (one to two years) and long-term (three to six years).

The final analysis addressed the issue of selection of children's mothers onto welfare. a two-stage selection model was estimated. In the first stage, probit models are used to estimate a measure of welfare purged of selection bias by including factors theorized to play significant roles in selecting women. These models estimate 1) the probability of ever using either AFDC or Food Stamps from 1986 to 1991, and (for a second set of analyses) 2) the probability of long-term dependence on either AFDC or Food Stamps.

Two types of variables are used in the probit models to predict welfare dependence. Individual maternal level variables capture some of the hypothesized relationship between personal characteristics and the propensity to use public assistance. The mother's age at first birth and her marital status at the age of the child whose outcomes are being estimated are included for this reason. Whether she lived in the southern United States or in a rural area during the 1986-1991 period[1] is also included. a 1979 measure of the woman's attitude towards going on welfare as a means of supporting her family was also incorporated into this stage of the analysis as was whether she scored low on a measure of self-esteem. The woman's educational

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[1]Respondents who reported living in the South or in a rural area for 4 or more of the six years between 1986 and 1991 are counted as living in the South or in a rural area.

attainment along with her AFQT score, while shown to be predictive of the child outcomes analyzed here, are included in the probit model because they are also correlated with welfare receipt.

Exogenous contextual variables, which described the local socioeconomic situation (measured at the county level with the exception of state AFDC benefit levels), are entered into the probit models as well. The average unemployment rate over the 1986-1991 period and the average percentage of women who were in the labor force during this time are entered separately. Due to their high correlations with each other, the mean fraction of families in poverty, the mean percentage of births to teens and the mean percentage of households headed by women over the 1986-1991 period are combined into a single variable. In addition, the maximum state AFDC benefit level for a family of three, averaged over this six-year period for each respondent, is included.

The second stage of the selection analysis consists of OLS regressions on the three child outcome measures. These outcomes are regressed on welfare receipt, net of selection factors, and poverty. The welfare variable in each model can be interpreted as welfare purged of selection as captured by the individual mother variables and exogenous variables in the probit model. The welfare variable in each model may be interpreted as welfare purged of selection as captured by the individual mother and exogenous variables in the probit model.

To summarize, the association between welfare and child outcomes is assessed sequentially; first, controlling for child and mother demographic characteristics; second, controlling for duration of poverty as well; and third, controlling also for selection onto welfare.

Data

The data for this study are from the National Longitudinal Survey of Youth-Child Supplement (NLSY-CS). The NLSY is an annual, nationally representative survey of youths who were 14 to 21 when the study began in 1979. In 1986, data collection was expanded to include a Child Supplement that includes a battery of assessments of the children of the women in the original sample. The outcome variables are from the 1992 wave of data. Measures of income, poverty status, AFDC and Food Stamp receipt during 1986-1991 are used. The sample consisted of 850 white and 554 African American children who were born between 1978 and 1983, when mothers ranged from ages 13-24, and who were interviewed in 1992. About one-third of the sample consists of siblings. Because this is a sample of children born to young mothers, it is relatively disadvantaged. Although this is an advantage for this study in that cases of poverty and welfare receipt are relatively numerous, it should be kept in mind that the NLSY-CS is not a nationally representative sample of children.

Dependent Variables

Two measures of cognitive attainment and a measure of problem behaviors are the dependent variables for this study. The cognitive measures are the PIAT mathematics assessment and the PIAT reading comprehension assessment. The PIAT tests measure academic achievement of children ages five and above. The mathematics assessment begins with recognizing numerals and progresses to advanced concepts in geometry and trigonometry. The reading comprehension test measures a child's ability to derive meaning from sentences that are read silently. The PIAT was standardized on a national sample of children in the late 1960s. Both of these tests have a mean standardized score (by definition) of 100, with a standard deviation of 15; possible scores range from 65 to 135. These highly regarded measures have been widely used (Baker, et al., 1993).

The Behavior Problems Index (BPI) is comprised of 28 mother-report items concerning children's behaviors. The items have been used to define six behavioral subscales: anti-social, anxious/depressed, headstrong, hyperactive, immature dependency and peer conflict/social withdrawal. a total score is also provided (Baker et al., 1993). As with the PIAT, normed scores have been constructed with a mean of 100 and standard deviation of 15; possible scores range from 72 to 149. The normed scores are based on data from the 1981 National Health Interview Survey. The total BPI score is used as the outcome in this analysis. The child outcome measures have been collected biannually, beginning in 1986. Here, 1992 measures are used as the child outcome measures.

Independent Variables

Demographic and background characteristics of the mother are used as control variables in the multivariate portion of the analysis, along with child variables found to affect children's scores on the outcome measures used in this study (Moore & Driscoll, 1997). Mother characteristics include her educational attainment, her score on the Armed Forces Qualifying Test (AFQT), administered in 1980, and her marital and employment history from the birth of the child until 1986, the first year in which welfare receipt is measured. The AFQT includes measures of arithmetic reasoning, word knowledge, paragraph comprehension and numerical reasoning; scores range from 0 to 1050 (Center for Human Resource Research, 1993). Thus, years of education and AFQT score are measures of human capital possessed by the child's mother. Child characteristics include age, sex and birth order. Also included as proxy indicators of socioeconomic status at the beginning of the period of focus are home and automobile ownership in 1986.

Welfare and Poverty Variables

The measure of welfare dependence used in this analysis combines both AFDC receipt

and Food Stamp receipt.[2] Receipt of both forms of assistance is measured for the six years from 1986 to 1991. Reported receipt of either benefit during any of these years is scored as one point. Thus, the value of this variable ranges from zero (no receipt of AFDC or Food Stamps) to twelve (receipt of both AFDC and Food Stamps each year). Welfare dependence is coded two ways. The first variant compares children whose families ever received either Food Stamps or AFDC during the 1986-1991 period to those children whose families never received either form of public assistance. The second version compares children who scored five or more points out of a possible twelve on the welfare variable to children who scored fewer than five points. This is a measure of long-term receipt. Separate variables were created for blacks and whites, thus four welfare dependence factors resulted: any dependence for whites, any dependence for blacks, long-term dependence for whites and long-term dependence for blacks.

Descriptive Results

Sample Characteristics

Table 1 presents background characteristics for the sample, by race. The average age is slightly older than eleven years. White children are more likely to be a first-born child than black children; whites come from families with fewer siblings, therefore a higher proportion of them are the oldest. Black and white mothers both average twelve years of education; while black mothers average lower average scores on the AFQT. White mothers' mean AFQT scores fall at about the 68th percentile whereas black mothers' scores are at the 47th percentile on this composite measure of math reasoning and ability, and word knowledge and reading comprehension. White mothers were twenty years old, on average, at the birth of their first child; the average age at first birth among black mothers was nineteen.

-- Table 1 about here --

Given the disadvantaged nature of the sample, the incidence of poverty is high. Yet, as Table 1 shows, black and white children have very different experiences with regard to public assistance and poverty. While more than two-thirds (68 percent) of white children never received either Food Stamps or AFDC between 1986 and 1991, only about one-third (35 percent) of black children lived in households that never received either of these benefits. Black children were long-term recipients of welfare at more than three times the rate of white children. The differences in time spent on poverty between blacks and whites during this period are equally stark. One in five white children spent three or more years from 1986 to 1991 below the poverty line, the ratio for black children is more than twice as high. In fact, only one-quarter of black children were never poor during this period.

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[2]In preliminary analyses Food Stamps receipt and AFDC receipt were entered as separate variables in the regressions. They were, however, highly correlated. Thus, a combination variable that includes both Food Stamps and AFDC receipt was created.

Bivariate Results

Table 2 presents mean scores on the PIAT math and reading tests and the Behavior Problem Index for blacks and for whites. The top panel shows scores differentiated by the family's welfare history between 1986 and 1991. The bottom panel presents scores by duration of poverty experienced by the family during the same period.

-- Table 2 about here --

As Table 2 shows, children who have experienced welfare have worse outcomes than children never on welfare. Similarly, those who experienced long-term receipt do worse than other children. Long-term poverty is significantly associated at the bivariate level with lower scores on the PIAT math and reading comprehension tests and worse scores on the Behavior Problems Index for both blacks and whites.

Among white children, those who have never experienced any welfare receipt or long-term receipt, as well as those who did not experience long-term poverty, have mean PIAT scores which are above the normed mean for these measures, while more disadvantaged children average scores below the mean. Although never-poor and short-term poor black children and those who have experienced any or long-term welfare receipt score slightly below the mean on PIAT math and reading tests, long-term poor children and those who experienced welfare score consistently lower, roughly one-half standard deviation below the mean of 100. The mean BPI scores of children in all categories are above the normed mean of 100 (signifying more behavior problems); nevertheless, children with histories of welfare have consistently higher BPI scores than those without such histories.

Multivariate Results

Welfare and Socioeconomic Background

Tables 3 and 4 present the results of OLS regressions of welfare on the three child outcome measures net of family and demographic control variables. Table 3 shows the coefficients for ever having received welfare, either AFDC or Food Stamps, during the six years between 1986 and 1991. Table 4 presents the coefficients for long-term welfare receipt.

-- Tables 3 and 4 about here --

Overall, controlling for measured socioeconomic factors reduces the differences in outcomes between children who have experienced welfare, either any receipt or long-term receipt, and other children that were seen in Table 2. The patterns differ by race. Welfare receipt is still associated with poorer cognitive and behavior outcomes for white children, but only with poorer reading scores for black children. This outcome suggests that factors such as children's gender, age and birth order, as well as the mother's level of human capital accounted for the

bivariate differences seen in the math scores and BPI scores of black children.

Welfare and Poverty

The results of the next set of models are shown in Tables 5 and 6. These models control for duration of poverty as well as sociodemographic variables. There are several noteworthy patterns. First, the addition of poverty controls does not substantively change the correlation between welfare receipt and child outcomes. Thus, being in a family that ever received welfare continues to be significantly and negatively associated with reading scores for both blacks and whites, as well as with whites' math scores and problem behaviors. Long-term welfare receipt continues to be related to worse math and behavior scores for whites and lower reading scores for blacks. In fact, the welfare coefficients for black children's reading scores are more negative after the addition of poverty controls than before. Second, net of welfare receipt, poverty is almost never significantly related to the outcome measures.

-- Tables 5 and 6 about here --

Selection onto Welfare

Table 7 provides results from the probit selection models estimating the odds of welfare receipt. Each equation includes variables that theoretically predict welfare receipt but not child well-being and which are statistically significant. Separate Inverse Mills Ratios (IMRs) are estimated for blacks and whites, and for any receipt and for long-term receipt.

-- Table 7 about here --

A number of variables are related in similar fashion to the odds of welfare receipt for blacks and for whites. For both groups, being married at the time of the child's birth significantly lowers the odds of being on welfare. The negative association between welfare receipt and age at first birth is roughly comparable for both groups as well. AFQT scores also have similar effects for both races; women in each group who score more than half a standard deviation above the mean for their race group are less likely to experience welfare receipt. Completing high school also lowers the odds of public assistance in each group.

There are, however, some striking differences between black and white women. a positive attitude towards welfare[3] and low self-esteem are both correlated with higher odds of welfare receipt for white but not for black women. Living in the South is correlated with lower odds of being on welfare for white but not black women.

Within race groups, differences also exist between the factors that predict the odds of ever

[3]Respondents were asked if they were likely to go onto welfare to support their families if necessary.

being on welfare and the odds of being on long-term welfare. For whites, a positive attitude towards welfare and low self-esteem are stronger predictors of long-term welfare reliance than of any welfare receipt. Living in the South and scoring high on the AFQT both lower the likelihood of long-term welfare receipt to a greater extent than they affect the odds of ever being on welfare. Although being a high school graduate lowers the odds of ever going on welfare for whites, it plays no role in the likelihood of long-term receipt, net of other factors in the model.

There are also differences distinguishing any receipt from long-term welfare receipt among blacks. Although age at first birth is inversely related to the odds of ever receiving welfare, it is not related to the chances of long-term welfare receipt. The odds ratios for both education and AFQT scores are smaller in the long-term welfare receipt model, suggesting that they play a less potent role than in predicting any welfare receipt. Furthermore, two of the exogenous variables -- percentage of women in the work force and the variable that combines rates of poverty and female heads of households and the percentage of births to teens -- are significant only in the model predicting any welfare.

Welfare (net of selection) and Poverty

The final set of OLS models, shown in Tables 8 and 9, replace recorded receipt of welfare with the Inverse Mills Ratio, which is welfare purged of selection, estimated from the first stage of the two-stage selection method (the probit models shown in Table 7). Comparing the welfare and poverty coefficients in Tables 8 (any welfare receipt) and 9 (long-term welfare receipt) to those in Tables 5 and 6 reveals the effect of controlling for selection onto welfare. (See Table 10 for a comparison of just the welfare and poverty coefficients across all models by race.)

Among whites, controlling for selection reduces the magnitude of significant welfare coefficients by anywhere from 45 percent (long-term receipt and BPI scores) to 63 percent (long-term receipt and PIAT math scores); the average decrease is 55 percent. The significance levels of the welfare coefficients also drop. However, with one exception, controlling for selection onto welfare does not have an effect on the statistical significance or magnitude of the poverty coefficients. Among blacks, controlling for selection onto welfare does not change the significant negative welfare coefficients in the PIAT reading models, but does result in the emergence of a significant welfare coefficient in one BPI model.

-- Tables 8 and 9 about here --

These results suggest that the poorer outcomes of children who lived in households with a history of receiving public assistance are due to a variety of factors and that these factors differ for blacks and whites. Among whites, welfare selection factors, both measured and unmeasured, appear to account for much, but never all, of the negative association between ever receiving welfare and the outcomes. For blacks, purging welfare of selection factors does not affect the welfare coefficient in either the math or reading score models. Once background variables, such as mother's human capital and work and marital histories, are held constant (variables first

entered in the models presented in Tables 3 and 4), there is virtually no change in the association between ever being on welfare and measures of black children's cognitive abilities. However, the welfare coefficient in the BPI model becomes significant; welfare purged of selection is correlated with more behavior problems among black children.

For whites, the relationships between the various outcomes and long-term welfare receipt are less uniformly negative than those of any welfare receipt when selection into this particular group is taken into account. Most notably, purging welfare of selection erases the negative association between welfare and math scores. For the cognitive measures of white children, the comparison of long-term experience with welfare to no or brief welfare experience appears to be less important than the comparison between children with any welfare experience and no welfare experience. This pattern suggests that the factors that select mothers into the population of long-term recipients are more harmful to their children's cognitive development than the experience of long-term welfare receipt itself.

Controlling for selection onto long-term welfare receipt does not change the relationship between welfare receipt and the outcomes measured for black children. Reading comprehension scores continue to be negatively related to long-term welfare as they also are to any welfare receipt. Another pattern that is true for both any and long-term welfare receipt among black children is the consistent negative association between long-term poverty and math scores.

Discussion

The effects of poverty and welfare on children and how evolving welfare experimentation will affect children's well-being are of concern to both the research and policy worlds. The results presented here augment the body of literature that can be brought to bear to answer researchers' and policymakers' questions on these important issues. These analyses allow for a 'purer' description of the extent to which welfare receipt is related to children's cognitive attainment and behavior. They do not just control for the effects of poverty, but also cleanse the relationship between welfare and child outcomes of factors that increase the likelihood that a child's family receives public assistance.

We find that ever being on welfare (even after controlling for sociodemographic factors, poverty, and selection onto welfare) is associated with worse outcomes for all three dependent variables for whites and two of three outcomes for blacks (see the top panel of Table 10). The apparent negative effects of long-term welfare receipt are less ubiquitous. The less consistently negative associations between long-term welfare and child outcomes that remain after purging welfare of selection implies that, net of maternal characteristics and history, and children's own characteristics, the consequences of ever moving into the welfare population are greater than remaining a member of that population for an extended period of time, once welfare receipt has begun.

Purging welfare of selection decreases the association between welfare and negative

outcomes for whites but not for blacks; thus selection factors appear to be better predictors of white children's development, as measured here, than of black children's development. This pattern suggests that, for whites, the negative bivariate associations between welfare and the outcome variables have two sources -- welfare itself and the measured and unmeasured factors that select children's families onto welfare. On the other hand, the source of the negative effects of welfare among black children, where they exist (reading comprehension scores), appear to be found in welfare receipt itself. Otherwise, the negative bivariate correlations appear to be due to child characteristics and maternal attributes, such as human capital and recent maternal marital and work histories.

The factors that predispose mothers to ever rely on welfare thus play a significant role in white children's cognitive and behavioral outcomes, yet there appears to be a residual and important negative effect of welfare receipt itself on some outcomes. Why this is so is not clear. Part or all of the answer may be found in the probit models. Undoubtedly, there still remain unmeasured selection factors that affect the associations found between welfare and child outcomes. Examination of these models suggests that maternal characteristics are more important welfare selection factors than the variables used to measure the economic and social environments for both any welfare and long-term welfare receipt. This may reflect failure to perfectly control for unmeasured heterogeneity; no doubt additional variables or variables measured differently, but not available in this data set (such as measures at the census tract or neighborhood level) could provide an improved description of the economic environmental factors that select people onto welfare. Therefore, a caveat must be kept in mind. The probit models are only as good as the predictive ability of the variables included in the estimation of welfare receipt. To the extent that these variables accurately and comprehensively account for an individual's propensity to be on welfare, the model is robust.

On the other hand, it is possible that some aspect of being in the welfare system negatively affects some children in some ways, even after controlling for both poverty and the factors that predispose their mothers to apply for and receive AFDC and/or Food Stamps. Thus, the source of the differences, in terms of outcomes, between children who ever experience welfare and those who never do may be found in the experience of welfare receipt itself, such as stigma or a negative effect on maternal motivation, depression or self-esteem, as well as in the factors that lead families to be on welfare.

Among black children, purging welfare of selection factors does not affect the negative relationship between welfare and reading comprehension scores. The possible explanations for this result echo those proffered for white children. It may reflect an inability to control for all of the individual and/or environmental factors that select children's parents to go onto welfare. Alternately, it may be interpreted as meaning that welfare receipt has a direct and negative effect on black children in middle childhood, an effect that emerges as lower reading comprehension. For the other outcomes, aspects of the child's family environment, as captured by mother's human capital, the extent of her labor force participation, the period of time she was married, and the child's birth order, appear to account for the bivariate patterns seen for black children.

These results do not easily lend themselves to policy prescriptions. It seems safe to recommend that, in order to protect, much less enhance, the well-being of children living in households that receive public assistance, policies should focus on the personal and contextual factors that result in welfare receipt in the first place. These factors hinder mothers' ability to find and keep employment at wages high enough to support their families. Evidently, they also impede children's cognitive development and lead to higher levels of problem behaviors. Programs and policies that successfully focus on school retention and delaying age at first birth among teens, while not focusing directly on ameliorating welfare's effects on young children, address several of the selection factors found to be related to the likelihood of receiving welfare. While such improvements can better the lives of the next generation of children, they are too late to help currently disadvantaged children.

These children are caught up in this country's massive welfare experiment. Given that these analyses were performed on a sample of children who lived under the old system of welfare, an appropriate question to ask is what understanding cab the results offer regarding the situations of children under the new welfare rules that have been being put into place since President Clinton signed the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996. Whether or not this experiment succeeds and for whom, it can be assumed that under the 1996 legislation children who remain on welfare or go onto welfare in the future under the new, stricter rules will constitute an even more disadvantaged group than the sample used here and than the pre-1996 population of children on AFDC. If, in the future, these analyses were to be replicated on young recipients of Temporary Aid to Needy Families (TANF, the replacement for AFDC), the negative relationships between welfare and child outcomes are predicted to be greater because these children will represent those whose parents were least able to enter the work force under new programs which have already resulted, along with a robust economy, in a significant paring of the welfare rolls. Devising interventions to improve these children's futures will require a detailed understanding of which aspects in their lives are the most significant causes of poor outcomes.

For now, these current analyses permit some insight into the nature of these factors. Future research efforts would benefit from more detailed data on the socioeconomic environments in which poor children live, at the neighborhood level, if possible, to assess the degree to which such factors directly affect child outcomes or operate through selection onto welfare. Similar analyses which include more information about family dynamics and parent-child relationships could test the parallel hypothesis of whether factors such as domestic abuse or maternal depression function as selection factors, as well as directly affecting young children's development.

Table 1. Comparison of Demographic, Poverty and Welfare Variables, by Race

	Whites	Blacks
Age of child	11.1	11.3
Birth order of child	1.5	1.7
Mother's education	12.1	12.0
Mother's AFQT	703.6	474.8
Mother's age at first birth	20.2	18.8
No. times received AFDC and/or Food Stamps		
0	67.8%	34.7%
1- 4	18.6	21.8
5+	13.6	43.5
No. years below poverty line		
0	44.9	25.9
1 - 2	35.1	23.8
3+	20.0	50.3

Table 2. Mean Child Scores on PIAT Math and Reading Tests and Behavior Problem Index by Duration of Welfare and Poverty for Children 9-14 in 1992, by Race

	Whites			Blacks		
	Math	Reading	BPI[a]	Math	Reading	BPI[a]
Welfare Receipt, 1986-1991						
Ever on Welfare						
No	104.5***	105.4***	105.7***	98.1***	99.8***	106.4***
Yes	98.0	98.4	111.2	92.5	93.0	110.1
Long-term Welfare						
No	103.4***	104.0***	106.4***	96.5***	98.2***	107.0***
Yes	95.7	97.6	114.4	91.8	91.7	111.1
Years in Poverty, 1986-1991						
0	103.5***[b]	105.3***[b]	106.1**[b]	95.7***[b]	96.0***[b]	107.6
1-2 (Short-term)	102.9	102.9	107.2	97.6	99.2	107.9
3+ (Long-term)	98.5	98.4	111.0	92.2	93.1	109.8

*p≤.05 **p≤.01 ***p≤.001

[a]higher BPI scores indicate more behavior problems

[b]Long-term poverty is significantly different than both no poverty and short-term poverty

Table 3. OLS Regressions of PIAT Math and Reading Scores and BPI Scores:
Ever on Welfare, by Race

	Whites			Blacks		
	Math	Reading	BPI	Math	Reading	BPI
Child Variables						
Male	1.20	-1.51	3.13**	0.48	-4.15***	3.46**
Age	-0.85**	-1.28***	0.47	-0.64*	-0.99***	-0.25
Birth order	-1.33*	-2.38***	-0.13	-1.42*	-2.17***	-0.40
Mother Variables						
Education	0.46	0.34	-0.48	0.07	0.68	-0.87*
AFQT	0.01***	0.02***	0.00	0.02***	0.02***	-0.00
Birth -> 1985						
Never married	0.11	0.89	0.45	1.36	1.19	-0.07
Married some (ref.)	----	----	----	----	----	----
Always married	2.29*	1.82	-2.45	1.49	0.65	-1.42
Never worked	-1.07	0.28	0.27	-1.91	0.69	1.08
Worked some	1.39	1.15	0.39	-0.07	0.48	-1.57
Always worked (ref.)	----	----	----	----	----	----
1986 Variables						
Owned home	1.42	0.80	-0.59	-2.18	-2.12	-0.39
Owned car	0.01	1.80	0.91	1.03	0.61	2.86*
1986-1991 Variables						
Never married	1.45	1.46	-2.85	0.68	0.53	-0.88
Married some (ref.)	----	----	----	----	----	----
Always married	-2.96**	-2.48*	-1.63	-0.18	-0.05	-1.22
Never worked	-0.91	1.70	1.08	-0.70	-1.99	1.48
Worked some (ref.)	----	----	----	----	----	----
Always worked	-2.27*	-1.32	-0.34	-0.57	-0.43	1.04
1992 Variables						
Ever on welfare	-4.85***	-4.98***	4.32**	-1.95	-3.21***	2.54
Intercept	99.42***	103.09***	106.62***	92.81***	95.11***	121.58***
adj. R^2	0.15	0.19	0.05	0.15	0.20	0.04

*p≤.05 **p≤.01 ***p≤.001

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Table 4. OLS Regressions of PIAT Math and Reading Scores and BPI Scores: **Long-term Welfare**, by Race

	Whites			Blacks		
	Math	Reading	BPI	Math	Reading	BPI
Child Variables						
Male	1.20	-1.43	3.15**	0.47	-4.17***	3.42**
Age	-0.83**	-1.27***	0.42	-0.65*	-0.93**	-0.30
Birth order	-1.35*	-2.41***	-0.18	-1.50**	-2.18***	-0.39
Mother Variables						
Education	0.54	0.40	-0.61	0.05	0.63	-0.81
AFQT	0.01***	0.02***	0.02	0.02***	0.02***	-0.00
Birth -> 1985						
Never married	0.40	1.25	-0.36	1.45	1.39	-0.19
Married some (ref.)	----	----	----	----	----	----
Always married	2.56*	2.20	-2.60*	1.58	1.05	-1.82
Never worked	-1.17	-0.06	-0.08	-1.95	1.00	0.65
Worked some	1.12	0.87	0.59	-0.16	0.45	-1.62
Always worked (ref.)	----	----	----	----	----	----
1986 Variables						
Owned home	1.90	1.36	-0.84	-2.03	-2.12	-0.27
Owned car	0.64	2.64	0.65	1.20	0.62	2.85*
1986-1991 Variables						
Never married	1.75	1.54	-3.28	0.67	0.94	-1.26
Married some (ref.)	----	----	----	----	----	----
Always married	-2.40*	-1.66	-1.75	0.16	0.26	-1.45
Never worked	-0.79	1.62	0.68	-0.73	-1.73	1.22
Worked some (ref.)	----	----	----	----	----	----
Always worked	-1.73	-0.68	-0.68	-0.14	-0.20	0.90
1992 Variables						
Long-term welfare	-4.19**	-2.59	6.25***	-0.70	-3.08*	2.80
Intercept	95.65***	98.66***	109.63***	91.64***	93.31***	122.54***
adj. R^2	0.14	0.17	0.05	0.15	0.20	0.04

*p≤.05 **p≤.01 ***p≤.001

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Table 5. OLS Regressions of PIAT Math and Reading Scores and BPI Scores:
Ever on Welfare, Short-term Poverty and Long-term Poverty, by Race

	Whites			Blacks		
	Math	Reading	BPI	Math	Reading	BPI
Child Variables						
Male	1.20	-1.49	3.13**	0.51	-4.04***	3.48**
Age	-0.85**	-1.25***	0.47	0.64*	-0.98***	-0.24
Birth order	-1.35*	-2.31***	-0.14	-1.44*	-2.25***	-0.41
Mother Variables						
Education	0.46	0.35	-0.48	0.08	0.72*	-0.87*
AFQT	0.01***	0.02***	0.00	0.02***	0.02***	-0.00
Birth -> 1985						
Never married	-0.10	0.85	0.45	1.41	1.36	-0.03
Married some (ref.)	----	----	----	----	----	----
Always married	2.32*	2.00	-2.41	1.52	0.76	-1.36
Never worked	-1.09	0.34	0.26	-1.88	0.83	1.26
Worked some	1.40	1.23	0.42	-0.06	0.56	-1.43
Always worked (ref.)	----	----	----	----	----	----
1986 Variables						
Owned home	1.45	0.78	-0.57	-2.16	-2.06	-0.42
Owned car	0.05	1.75	0.95	1.03	0.59	2.75*
1986-1991 Variables						
Never married	1.43	1.43	-2.87	0.62	0.35	-0.81
Married some (ref.)	----	----	----	----	----	----
Always married	-2.90**	-2.96*	-1.63	-0.15	0.30	-1.22
Never worked	-0.96	1.71	1.03	-0.69	-1.97	1.53
Worked some (ref.)	----	----	----	----	----	----
Always worked	-2.24*	-1.66	-0.36	-0.46	-0.07	1.13
1992 Variables						
Ever on welfare	-4.94***	-4.50***	4[illegible]**	-2.15	-3.83**	2.54
Short-term poverty	-0.08	-1.87	-0.30	0.39	1.51	1.11
Long-term poverty	0.39	-1.94	0.12	0.62	2.09	0.30
Intercept	99.32***	104.03***	106.61***	92.32***	93.38***	120.97***
adj. R^2	0.15	0.19	0.04	0.15	0.20	0.04

*p≤.05 **p≤.01 ***p≤.001

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Table 6. OLS Regressions of PIAT Math and Reading Scores and BPI Scores: **Long-term Welfare**, Short-term Poverty and Long-term Poverty, by Race

	Whites			**Blacks**		
	Math	Reading	BPI	Math	Reading	BPI
Child Variables						
Male	1.21	-1.41	3.16**	0.47	-4.07***	3.44**
Age	-0.83**	-1.24***	0.42	-0.65*	-0.92**	-0.29
Birth order	-1.34*	-2.29***	-0.18	-1.51**	-2.26***	-0.41
Mother Variables						
Education	0.54	0.41	-0.61	0.05	0.66	-0.80
AFQT	0.01***	0.02***	0.00	0.02***	0.02***	-0.01
Birth -> 1985						
Never married	0.42	1.12	-0.36	1.45	1.57	-0.13
Married some (ref.)	----	----	----	----	----	----
Always married	2.64*	2.36*	-2.63*	1.60	1.20	-1.75
Never worked	-1.14	0.07	-0.09	-1.91	1.17	0.84
Worked some	1.17	1.02	0.57	-0.12	0.52	-1.46
Always worked (ref.)	----	----	----	----	----	----
1986 Variables						
Owned home	1.92	1.24	-0.85	-2.03	-2.06	-0.29
Owned car	0.66	2.42	0.63	1.17	0.61	2.74*
1986-1991 Variables						
Never married	1.73	1.49	3.26	0.69	0.84	-1.20
Married some (ref.)	----	----	----	----	----	----
Always married	-2.52*	-2.47*	-1.72	0.16	0.38	-1.43
Never worked	-0.83	1.68	0.72	-0.72	-1.68	1.27
Worked some (ref.)	----	----	----	----	----	----
Always worked	-1.84	-1.25	-0.64	-0.12	0.16	1.06
1992 Variables						
Long-term welfare	-4.39**	-2.07	6.34***	-0.67	-3.52**	2.87
Short-term poverty	-0.78	-2.43*	0.34	-0.30	1.32	1.35
Long-term poverty	-0.15	-3.00	0.01	0.07	1.80	0.50
Intercept	95.99***	100.62***	109.54***	91.48***	91.50***	121.69***
adj. R^2	0.14	0.18	0.05	0.14	0.20	0.04

*p≤.05 **p≤.01 ***p≤.001

Table 7. Probit Models for Ever on Welfare and Long-term Welfare Receipt, by Race

	Ever on Welfare		Long-term Welfare	
	Whites	Blacks	Whites	Blacks
Mother characteristics				
Mother's education	-0.013	-0.025	-0.006	-0.003
Married at child's birth	-0.637***	-0.628***	-0.671***	-0.642***
Positive attitude towards welfare	0.474***	0.208	0.559***	0.235
Age at first birth	-0.069**	-0.114***	-0.075*	-0.056
Low self-esteem	0.395***	0.124	0.532***	0.183
Lived in the South	-0.381*	-0.225	-0.788**	-0.416
Lived in rural area	0.217	-0.226	0.271	0.158
High school graduate	-0.357**	-0.474**	-0.262	-0.328*
High AFQT score	-0.540***	-0.623***	-0.726***	-0.395*
Exogenous characteristics				
Unemployment rate	0.063	0.049	0.012	0.057
% women in work force	0.008	-0.086***	-0.011	-0.025
Combination variable[a]	0.024	0.048*	0.010	0.028
Maximum state AFDC benefit level	0.000	0.000	0.001	-0.001
Intercept	0.633	7.320***	0.387	1.626
Log Likelihood	-380.094***	-261.238***	-218.637***	-263.707***

*p≤.05 **p≤.01 ***p≤.001

[a]Combination of % of households in poverty, % of births to teens, % of households that are female-headed

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Table 8. OLS Regressions of PIAT Math and Reading Scores and BPI Scores:
Selection onto Ever on Welfare, Short-term Poverty and Long-term Poverty, by Race

	Whites			Blacks		
	Math	Reading	BPI	Math	Reading	BPI
Child Variables						
Male	1.66	-0.98	2.64*	0.55	-1.45	2.96*
Age	-0.92**	-1.28***	0.65	-0.12	-0.41	0.18
Birth order	-1.28*	-2.14***	-0.06	0.66	-2.33**	0.55
Mother Variables						
Education	0.58	0.49	-0.48	0.39	0.04	0.26
AFQT	0.02***	0.02***	-0.00	0.02***	0.03***	-0.00
Birth -> 1985						
Never married	-0.21	1.64	0.94	-0.06	-0.17	4.67*
Married some (ref.)	----	----	----	----	----	----
Always married	3.29**	2.74*	-2.73*	0.42	0.09	0.56
Never worked	-0.96	0.46	0.18	0.54	0.13	6.97*
Worked some	1.90	1.56	-0.17	-0.43	-2.09	5.97*
Always worked (ref.)	----	----	----	----	----	----
1986 Variables						
Owned home	1.82	1.18	-1.18	-0.22	-0.82	0.49
Owned car	-0.27	1.10	0.46	-1.88	1.27	-0.39
1986-1991 Variables						
Never married	1.95	1.21	-2.35	-3.20	0.29	-0.66
Married some (ref.)	----	----	----	----	----	----
Always married	-3.08**	-2.90*	-1.67	-2.72	0.06	-0.03
Never worked	-1.50	0.90	1.51	-1.58	-2.51	-2.18
Worked some (ref.)	----	----	----	----	----	----
Always worked	-2.02	-1.42	-0.72	1.03	0.22	1.44
1992 Variables						
Long-term welfare	-2.35***	-1.72*	1.93*	-0.41	-3.74***	2.55*
Short-term poverty	-0.03	-1.80	-0.51	-2.18	1.15	-2.81
Long-term poverty	-0.33	-2.79	0.58	-3.66*	0.71	1.26
Intercept	93.47***	98.22***	108.36***	97.38***	93.85***	97.58***
adj. R^2	0.15	0.19	0.04	0.09	0.20	0.04

*p≤.05 **p≤.01 ***p≤.001

Table 9. OLS Regressions of PIAT Math and Reading Scores and BPI Scores:
Selection onto Long-term Welfare, Short-term Poverty and Long-term Poverty, by Race

	Whites			Blacks		
	Math	Reading	BPI	Math	Reading	BPI
Child Variables						
Male	1.64	-0.98	2.58*	0.55	-1.46	2.91
Age	-0.88**	-1.24***	0.62	-0.12	-0.33	0.08
Birth order	1.20*	-2.07***	-0.16	-0.63	-2.07**	0.46
Mother Variables						
Education	0.56	0.45	-0.56	-0.39	0.02	0.31
AFQT	0.02***	0.02***	0.00	0.02***	0.03***	-0.00
Birth -> 1985						
Never married	0.32	2.08	0.54	-0.02	0.57	4.13
Married some (ref.)	----	----	----	----	----	----
Always married	3.30**	2.69*	-2.95*	0.48	0.09	0.85
Never worked	-1.01	0.31	-0.14	0.65	-0.07	7.72**
Worked some	1.74	1.41	-0.13	-0.36	-2.10	6.31*
Always worked (ref.)	----	----	----	----	----	----
1986 Variables						
Owned home	2.22*	1.49	-1.32	-0.33	-1.01	0.15
Owned car	0.10	1.43	0.38	-1.77	1.99	-0.62
1986-1991 Variables						
Never married	1.90	1.05	-2.44	-2.94	1.19	-0.45
Married some (ref.)	----	----	----	----	----	----
Always married	-2.69*	-2.46*	-1.53	-2.74	0.34	-0.45
Never worked	-1.65	0.71	1.48	-1.46	-2.40	-1.77
Worked some (ref.)	----	----	----	----	----	----
Always worked	-1.67	-1.13	-0.88	1.02	0.44	0.98
1992 Variables						
Long-term welfare	-1.61	-0.40	3.48**	-0.78	-3.56**	0.45
Short-term poverty	-0.50	-2.05	0.06	-2.16	1.27	-2.82
Long-term poverty	-0.74	-3.38*	0.20	-3.37*	1.22	2.15
Intercept	93.81***	98.00***	109.93***	96.86***	91.65***	97.38***
adj. R^2	0.14	0.18	0.05	0.09	0.19	0.03

*p≤.05 **p≤.01 ***p≤.001

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Table 10. Summary of Regression Coefficients for Welfare and Poverty

	Whites			Blacks		
	Welfare only	Welfare & Poverty	Selection onto Welfare	Welfare only	Welfare & Poverty	Selection onto Welfare
Any Welfare Receipt						
PIAT-Math						
Welfare	-4.85***	-4.94***	-2.35***	-1.95	-2.15	-0.41
Short-term poverty	----	-0.08	-0.32	----	0.39	-2.18
Long-term poverty	----	0.39	-0.33	----	0.62	-3.66*
PIAT Reading						
Welfare	-4.98***	-4.50***	-1.72*	-3.21***	-3.83**	-3.74***
Short-term poverty	----	-1.87	-1.80	----	1.51	1.15
Long-term poverty	----	1.94	-2.79	----	2.09	0.71
BPI						
Welfare	4.32***	4.30**	1.93*	2.54	2.54	2.55*
Short-term poverty	----	-0.30	-0.51	----	1.11	-2.81
Long-term poverty	----	0.12	0.58	----	0.30	1.26
Long-term Welfare Receipt						
PIAT Math						
Welfare	-4.19**	-4.39**	-1.61	-0.70	-0.67	-0.78
Short-term poverty	----	-0.78	-0.50	----	-0.30	-2.16
Long-term poverty	----	0.15	0.74	----	0.07	-3.37*
PIAT Reading						
Welfare	-2.59	-2.07	-0.40	-3.08*	-3.52**	-3.56***
Short-term poverty	----	-2.43*	-2.05	----	1.32	1.27
Long-term poverty	----	-3.00	-3.38*	----	1.80	1.22
BPI						
Welfare	6.25***	6.34***	3.48**	2.80	2.87	0.45
Short-term poverty	----	0.34	0.06	----	1.35	-2.82
Long-term poverty	----	0.01	0.20	----	0.50	2.15

*p≤.05 **p≤.01 ***p≤.001

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